



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 7450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/603,572	06/25/2003	Jason A. Dean	979-002 CIP	3351
20874	7590	08/29/2005	EXAMINER	
WALL MARJAMA & BILINSKI 101 SOUTH SALINA STREET SUITE 400 SYRACUSE, NY 13202			HERNANDEZ, OLGA	
			ART UNIT	PAPER NUMBER
			2144	

DATE MAILED: 08/29/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/603,572

Applicant(s)

DEAN, JASON A.

Examiner

Olga Hernandez

Art Unit

2144

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 12 July 2005.  
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-10 and 21-30 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 1-10, 21-23 and 25-30 is/are rejected.  
7) ☒ Claim(s) 24 is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.  
10) ☒ The drawing(s) filed on 6/25/03 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_.  
5) ☐ Notice of Informal Patent Application (PTO-152)  
6) ☐ Other: \_\_\_\_\_.

**DETAILED ACTION**

***Response to Arguments***

Applicant's arguments have been considered but are moot in view of the new ground(s) of rejection.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-4, 6, 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Keller (6,199,000) in view of Airey et al (6,454,036).

As per claim 1, Keller teaches:

- a drive system comprising a plurality of independently operable treads (figures 2 and 9-11);
- a control module in electrical communication with said drive system (figures 3, 4, 7, 12-14), said control module configured to command the operation of each tread;
- a memory module in electrical communication with said control module, said memory module configured to store and retrieve information (column 13, lines 22-29); and

- a compass module in electrical communication with said control module, said compass module configured to discern an orientation of said programmable robotic apparatus (column 4, lines 55-67).

Keller does not teach the compass module configured to discern an orientation relative to the magnetic field of the planet Earth. However, Keller teaches another means that perform the same function as the compass. Therefore, they are considered functional equivalent. See *In re Brown*, 459 F.2d 531, 535, 173 USPQ 685, 688 (CCPA 1972). *In re Mulder*, 716 F.2d 1542, 219 USPQ 189 (Fed. Cir. 1983). Applicant's invention uses the compass to discern orientation. Indeed, Keller's invention performs the same function with another means such as gyrocompass. Applicant's compass is in communication with other modules as well as Keller's invention. The "magnetic field of the planet Earth" only affects the compass functions, not the whole invention. Keller's invention is not affected at all by the "magnetic field of the planet Earth," because it uses another means (column 4, lines 55-67). Note, the purpose of both inventions is to discern orientation, which it is achieved in Keller's invention (figures 2a and 9b). Keller does not teach the orientation relative to the magnetic field of the planet Earth based on an analysis of at least one directional component of the magnetic field. However, Airey teaches the orientation relative to the magnetic field of the planet Earth based on an analysis of at least one directional component of the magnetic field (column 5, lines 16-23 and column 6). Thus, it would have been obvious to one skill in the art to combine Keller's invention with Airey's directional components in order to direct the proportion and direction of the power delivered to the driving wheels, keeping the vehicle on the predetermined path.

Art Unit: 2144

As per claim 2, Keller teaches the apparatus is configured to operate based at least in part on information in the memory module (column 5).

As per claim 3, Keller discloses a tool configured to perform a mechanical operation (figures 2, 9-11).

As per claim 4, Keller teaches a cutting tool in column 20, lines 35-40.

As per claim 6, Keller teaches the same memory modules (column 5).

As per claim 8, Keller teaches a command receiver in communication with the control module (figures 3-4, 7, 12-14).

As per claim 10, Keller teaches the GPS navigation system to receive directions (figures 3-4, 7).

Claims 5, 9 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Keller (6,199,000) in view of Airey et al (6,454,036), further in view of Nelson (5,974,347).

As per claim 5, Keller teaches the apparatus being use for agriculture operations. Keller does not teach the apparatus being a programmable lawn mower. However, Keller's invention performs cutting functions and agricultural function similar and equivalent to a lawnmower (column 20, lines 35-40). Further, Nelson teaches the lawnmower in figure 1. Therefore, it would have been obvious to one skill in the art to implement Nelson's lawnmower functions into Keller's invention in order to move to successive points of the desired path without depending on cut-uncut grass borders.

As per claim 9, Keller does not teach a portable transmitter configured to communicate with the command receiver module. However, Nelson teaches it in column 5, lines 5-10 and

Art Unit: 2144

figures 1 and 12b. Thus, it would have been obvious to one skill in the art to adapt Nelson's portable device in Keller's invention in order to follow a programmed path of data points without the use of calibration markers, lights, wires, or buried conductors.

As per claim 10, Keller does not teach the command receiver module receiving signals comprising directives. However, Nelson teaches it in column 2, lines 56-63, and column 8, line 66 through column 9, line 10. Therefore, it would have been obvious to one skill in the art to implement Nelson's lawnmower functions into Keller's invention in order to move to successive points of the desired path without depending on cut-uncut grass borders.

Claims 21-23, 28 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Keller (6,199,000) in view of Airey et al (6,454,036), further in view of Nadkarni (6,810,324).

As per claims 21 and 28, Keller teaches:

- providing at least one command recorded on a machine-readable medium, said at least one command representing an instruction for traversing an area of interest (figures 2a, 3 and 9b);
- operating said programmable robotic apparatus according to said at least one command recorded on said machine-readable medium (figures 2a, 3, 9b, 11 and 12);
- discerning an orientation of said programmable robotic apparatus (column 3, lines 1-5);
- said programmable robotic apparatus autonomously traverses an area of interest (column 20, lines 23-25).

Keller does not teach comparing said orientation of said programmable robotic apparatus to a direction recorded in said at least one command to determine an error signal; and in the event that said error signal exceeds a predetermined value, commanding said programmable robotic apparatus to take a corrective action; whereby said programmable robotic apparatus autonomously traverses an area of interest. However, Nadkarni teaches comparing said orientation of said programmable robotic apparatus to a direction recorded in said at least one command to determine an error signal (figure 8); and in the event that said error signal exceeds a predetermined value, commanding said programmable robotic apparatus to take a corrective action (column 2, lines 35-48). Therefore, it would have been obvious to one skill in the art to combine Keller's positioning system with Nadkarni's corrective action in order to improve the quality of position measurements of an object in a situation when a previously available source of high quality position measurements becomes unavailable, and only a low quality source of position measurements is available. Further, providing a mechanical or automatic means to replace manual activity, which has accomplished the same result, involves only routine skill in the art. In re Venner, 120 USPQ 192.

As per claims 22 and 30, Keller does not teach comparing said orientation, and in the event that said error signal exceeds a predetermined value, commanding said programmable robotic apparatus to take a corrective action, are performed iteratively during a period of operation of said programmable robotic apparatus. However, Nadkarni teaches comparing said orientation, and in the event that said error signal exceeds a predetermined value, commanding said programmable robotic apparatus to take a corrective action, are performed iteratively during a period of operation of said programmable robotic apparatus (column 2, lines 35-48).

Art Unit: 2144

Therefore, it would have been obvious to one skill in the art to combine Keller's positioning system with Nadkarni's corrective action in order to improve the quality of position measurements of an object in a situation when a previously available source of high quality position measurements becomes unavailable, and only a low quality source of position measurements is available.

As per claim 23, Keller discloses a tool configured to perform a mechanical operation (figures 2, 9-11).

Claim 25 is rejected under 35 U.S.C. 103(a) as being unpatentable over Keller (6,199,000) in view of Airey et al (6,454,036), further in view of Bartsch et al (6,459,955).

As per claim 25, Keller does not teach operating said programmable robotic apparatus under external control, the programmable robotic apparatus receiving directives from an external source and traversing an area of interest; taking readings from a compass module of said programmable robotic apparatus; and recording said directives and readings on a machine-readable medium for later recovery. However, Bartsch teaches operating said programmable robotic apparatus under external control, the programmable robotic apparatus receiving directives from an external source and traversing an area of interest (figure 12, column 19, lines 23-33); taking readings from a compass module of said programmable robotic apparatus (column 22, lines 5-9); and recording said directives and readings on a machine-readable medium for later recovery (column 22, lines 10-34). Therefore, it would have been obvious to one skill in the art to combine Keller's invention with Bartsch's external control guidance in order to reduce the workload of working families by performing useful tasks, capable of easily being trained.



Claim 26 is rejected under 35 U.S.C. 103(a) as being unpatentable over Keller (6,199,000) in view of Airey et al (6,454,036), further in view of Bartsch et al (6,459,955), and further in view of Kruse (2002/0019696).

As per claim 26, neither Keller nor Bartsch teaches the directives order to be recorded in the format in which the directives are received. However, Kruse teaches it in paragraph [0046]. Thus, it would have been obvious to one skill in the art to combine the aforementioned inventions in order to periodically or continuously determining the present location of the vehicle as the vehicle moves through or in a geographic area, assessing whether items of commentary related to different parts of the geographic area are available as the vehicle passes through different parts of the geographic area, from a number of stored items of commentary related to different parts of the geographic area.

Claim 27 is rejected under 35 U.S.C. 103(a) as being unpatentable over Keller (6,199,000) in view of Airey et al (6,454,036), further in view of Bartsch et al (6,459,955), and further in view of Nowak et al (2002/0193121).

As per claim 27, neither Keller nor Bartsch teaches the directives order to be recorded in different format in which the directives are received. However, Nowak teaches it in paragraph [0036]. Thus, it would have been obvious to one skill in the art to implement Nowak's subsystem for recording in different format in which the directives are received with Keller's and Bartsch's inventions in order to determine if any of a plurality of position determination

Art Unit: 2144

equipment sites may be utilized to provide location information on this particular mobile communications unit.

Claim 29 is rejected under 35 U.S.C. 103(a) as being unpatentable over Keller (6,199,000) in view of Airey et al (6,454,036), further in view of Nadkarni (6,810,324), and further in view of Bartsch et al (6,459,955).

As per claim 29, neither Keller nor Nadkarni teaches operating said programmable robotic apparatus under external control, the programmable robotic apparatus receiving directives from an external source and traversing an area of interest; taking readings from a compass module of said programmable robotic apparatus; and recording said directives and readings on a machine-readable medium for later recovery. However, Bartsch teaches operating said programmable robotic apparatus under external control, the programmable robotic apparatus receiving directives from an external source and traversing an area of interest (figure 12, column 19, lines 23-33); taking readings from a compass module of said programmable robotic apparatus (column 22, lines 5-9); and recording said directives and readings on a machine-readable medium for later recovery (column 22, lines 10-34). Therefore, it would have been obvious to one skill in the art to combine Keller's invention with Bartsch's external control guidance in order to reduce the workload of working families by performing useful tasks, capable of easily being trained.

***Allowable Subject Matter***

Art Unit: 2144

Claim 24 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a).

Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Olga Hernandez whose telephone number is 571-272-7144. The examiner can normally be reached on Mon-Thu 8:30am-7:00pm.

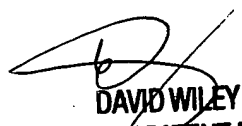
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wiley can be reached on 571-272-3923. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2144

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Olga Hernandez  
Examiner  
Art Unit 2144



DAVID WILEY  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2100